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Wireworms Part 1: Insecticides evaluated in Missouri

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Abstract
If conversations with farmers and agribusiness personnel are any indication, then wireworm problems in corn appear to be on the increase across Iowa. During 1999, I was asked more times about wireworms than any other soil-dwelling pest, and the questions centered on the best method of control.

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 [1] **Wireworms: pests of corn seed.**

Insecticides are the best option of preventing stand loss in corn, but selecting the best product has not been easy, primarily because less information is available compared with a pest such as corn rootworm. Entomologists Darren Hoffman and Armon Keaster, University of Missouri, have summarized eight years of their wireworm research. An examination of the average performance of the granule or liquid insecticides applied at planting shows that performance is very similar; all products are within 10 percent of each other. Seed treatments also show potential for protecting seed, but the researchers caution that the products may not be effective against large populations. Their comments and data are presented below.

"Insecticides for control of wireworms are evaluated at one or more locations in Missouri each year. Typically, wireworms have been a problem in the Missouri prairie land soils reaching from southwestern Missouri diagonally across the state to northeastern Missouri. In recent years wireworm infestations appear to be on the increase and occur outside this defined area, particularly in northwestern counties."

"The summary presented in Table 1 includes compounds that are used for control of wireworms, corn rootworms, and cutworms. Table 1 also includes seed treatments for early season insect and disease control. The averages listed are for a final standcount as a percent of healthy plants surviving in rows containing 52 seeds. Counts are usually made two to three weeks following planting. Observations for corn seedlings with obvious injury and stunting also are made at this time. Although these observations are not included in Table 1, injury of this nature is reflected as erratic performance. Seed treatments are less effective for control of high populations of wireworms than granular and liquid compounds and show no effect on rootworms or cutworms. All insecticide compounds and seed treatments control seedcorn maggot and seedcorn beetle."

"New seed treatments are under evaluation and show considerable improvement over those currently on the market. Seed treatments offer seed protection from wireworms, seedcorn maggot, seedcorn beetle, and early season seed and seedling diseases. Affordable protection of seed and seedlings is the foundation for maximum yields and profit."

Table 1. **Comparison of efficacy of registered insecticides for control of wireworms in corn**

measured as a percentage of healthy plants.

Insecticide	Rate (oz/1,000 row ft)a	Placement	Avg.	1998	1997	1996	1995	1994	1993	1992	1991
Aztec 2.1G	6.7	In-furrow	80	88	78	69	80	83	--	87	75
Counter 15G	8.0	In-furrow	80	--	79	70	88	77	85	82	79
Counter 20CR	6.0	In-furrow	73	81	81	68	88	66	71	81	51
Force 3G	4.0	In-furrow	81	87	82	67	87	80	80	--	--
Fortress 5G	3.0	In-furrow	77	84	77	72	76	--	--	--	--
Furadan 4F	1.8	In-furrow	83	91	83	76	--	83	85	--	--
Lorsban 15G	8.0	In-furrow	73	--	69	68	79	72	73	78	--
Regent 4SG	0.13 lb (AI)/acre	1 GPAb	76	86	66	--	--	--	--	--	--
Thimet 20G	6.0	7-in. band	77	85	76	68	81	69	76	74	87
Control	--	--	54	76	49	64	71	58	45	62	7
Seed Treatment											
Kernel Guard (captan-diazinon-lindane)	3.6 oz	ST	80	86	70	--	--	88	75	--	--
Germate Plus (vitavax-diazinon-lindane)	3.6 oz	ST	85	82	76	92	89	--	--	--	--
Kernal Guard											

Supreme (vitavax-permethrin)	3.6 oz	ST	72	83	61	--	--	--	--	--	--
Control	--	--	67	82	54	81	86	58	41	--	--

a 30-in. row spacing.

b Microtubule.

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